



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/086,946	02/28/2002	Ray L. Pickup	10012968 -1	7672

7590 12/08/2003
HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, CO 80527-2400

EXAMINER

LIANG, LEONARD S

ART UNIT PAPER NUMBER

2853

DATE MAILED: 12/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/086,946

Applicant(s)

PICKUP, RAY L.

Examiner

Leonard S Liang

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) 12,13,24-28 and 39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11,14-23,29-38,40 and 41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. This application contains claims directed to the following patentably distinct species of the claimed invention:

Species I drawn to figure 4

Species II drawn to figure 6

Species III drawn to figure 10

Species IV drawn to figure 11

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 1-11, 14-24, 29-37, and 40-41 are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

During a telephone conversation with Robert Watson on 5/13/03 a provisional election was made without traverse to prosecute the invention of Species I, claims 1-7, 9-11, 14-23, 29-38, 40-41. Affirmation of this election must be made by applicant in replying to this Office action. Claim 8 was not elected by the applicant, but is considered to be generic, so it will also

be examined. Claims 12-13, 24-28, and 39 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 114b (see figure 5; reference not deleted in amended drawings). A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claim 31 is objected to because of the following informalities: The claim states “airflow directing means for applying the airflow to print imaging with directional components of substantial magnitude into the print imaging sufficient to stabilize media bearing the print imaging and with directional components away from a printzone whereat the print imaging is produced.” This is not proper grammar. It will be construed that the claim should state “airflow directing means for applying the airflow to print imaging with directional components of substantial magnitude into the print imaging **so as to be** sufficient to stabilize media bearing the print imaging and with directional components away from a printzone whereat the print imaging is produced.” Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

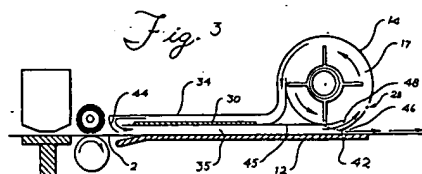
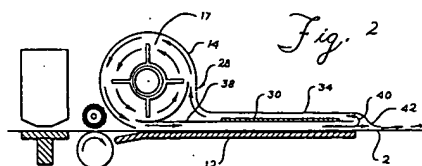
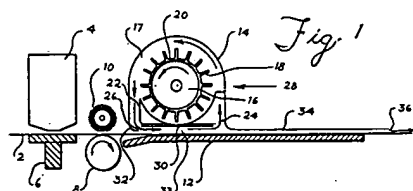
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 2853

4. Claims 1-5, 8-11, 14-19, 22-23, 31, 34-38, 40-41 are rejected under 35 U.S.C. 102(b) as being anticipated by Smith (US Pat 5020244).

Smith discloses:

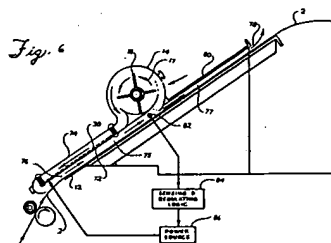
- {claim 1} A method of operating an inkjet printing mechanism (figure 1); passing media through a printzone, the printzone including a support apparatus supporting the media thereat (figure 1, reference 2, 6); during the passing, applying print imaging by application of ink from an ink dispensing element and onto a first surface of the media (figure 1, reference 4); directing an airflow at the first surface, the airflow including a first directional component away from the printzone and a second directional component onto the first surface, the second directional component urging the media against the support apparatus (figures 1-3, reference 17; abstract; column 1, lines 56-57)



- {claim 2} the airflow is directed from an elongate vent (figure 1, reference 22, 26)
- {claim 3} a length dimension of the elongate vent is generally transverse to a media feed direction of the media passing through the printzone (figures 1-3, reference 22, 26)

Art Unit: 2853

- {claim 4} the length dimension of the elongate vent is substantially coincident with a width of the printzone (figures 1-3, reference 22, 26)
- {claim 5} the airflow carries heat energy taken from a heat source (figure 1, reference 30; abstract)
- {claim 8} the airflow is provided from an elongate vent having a length dimension less than a width of the printzone (figure 1, reference 32)
- {claim 9} the airflow carries heat energy taken from a heat source otherwise producing waste heat energy (abstract)
- {claim 10} the waste heat energy originates from electronic control circuit components (figure 6, reference 86; column 5, lines 53-63; claim naturally suggested)



- {claim 11} the waste heat energy originates from motor components (naturally suggested in view of column 5, lines 41-46)
- {claim 14} the second directional component is of sufficient magnitude to maintain the media against the support surface in the printzone (figure 1, reference 34; column 1, lines 41-45; abstract)
- {claim 15} the second directional component is directed away from the printzone (figure 1, reference 26)
- {claim 16} the first directional component is substantially uniform across the media in a direction generally transverse to a feed direction of the media passing through the printzone (figure 1, reference 22, 26)
- {claim 17} the second directional component has a greater magnitude at a laterally-outermost portion of the media relative to a laterally-central portion of

the media (figure 1, reference 26; when we consider laterally-central portion of media to be located at printhead)

- {claim 18} the first directional component varies across the media in a direction generally transverse to a direction of the media passing through the printzone (figure 1, reference 22, 26)
- {claim 19} ink assist air knife (figure 1); a heat source (figure 1, reference 24, 26, 30); an air transport fluidly coupled to the heat source and moving the airflow therethrough (figure 1, reference 16); a conduit fluidly coupled to the air transport whereby the airflow as provided by the air transport passes through the conduit and exits a vent of the ink assist air knife as a heated airflow, with the vent being located relative to an inkjet printing mechanism having a printzone, the airflow as provided at the vent including directional components away from the printzone and sufficiently into media for stabilization thereof, the media having print imaging thereon as applied by the inkjet printing mechanism (figures 1-3, reference 22, 26; column 1, lines 56-57; since as seen in figure 2, airflow is directed in a downward direction, there is inherently a downward airflow direction. Where there is a downward airflow component, there is inherently stabilization of the media.)
- {claim 22} An inkjet printing mechanism (figure 1); a printing system (figure 1, reference 2, 4, 6); an ink drying system including a heat source, an air transport, and an outlet vent, the air transport providing an airflow through the heat source, at the vent, and against the media with directional components at the outlet vent including a first component directed away from the printzone and a second component directed sufficiently into the media for stabilization thereof (figures 1-3, reference 16, 22, 26; column 1, lines 56-57; since as seen in figure 2, airflow is directed in a downward direction, there is inherently a downward airflow direction. Where there is a downward airflow component, there is inherently stabilization of the media.)

Art Unit: 2853

- {claim 23} the airflow promotes drying of the print imaging and maintains the media within a selected range of distance relative to the ink dispensing element by maintaining the media against the support apparatus (figure 1, reference 2; abstract; column 1, lines 41-45)
- {claim 31} An ink assist air knife (figure 1); heat energy supplying means (figure 1, reference 30); airflow producing means (figure 1, reference 16); airflow directing means for applying the airflow to print imaging with directional components of substantial magnitude into the print imaging so as to be sufficient to stabilize imaging and with directional components away from a printzone whereat the print imaging is produced (figures 1-3, reference 16, 22, 24, 26; column 1, lines 56-57; since as seen in figure 2, airflow is directed in a downward direction, there is inherently a downward airflow direction. Where there is a downward airflow component, there is inherently stabilization of the media.)
- {claim 34} the airflow directing means include a vent located in an inkjet printing mechanism having a printzone, the airflow being provided at the vent, the printzone defining a location at which the print imaging is formed (figure 1, reference 26)
- {claim 35} An inkjet printing mechanism (figure 1); print image applying means (figure 1, reference 4); airflow directing means for directing the airflow into the print imaging including directional components away from the printzone and sufficiently into the media to stabilize the media in the printzone (figures 1-3, reference 16, 22, 26; column 1, lines 56-57; since as seen in figure 2, airflow is directed in a downward direction, there is inherently a downward airflow direction. Where there is a downward airflow component, there is inherently stabilization of the media.)
- {claim 36} the inkjet printer further comprises means for incorporating heat energy into the airflow (figure 1, reference 30)

Art Unit: 2853

- {claim 37} the airflow directing means includes an air knife vent (figure 1, reference 26)
- {claim 38} the air knife vent is stationary (figure 1, reference 26)
- {claim 40} An inkjet printing mechanism (figure 1); a print imaging device (figure 1, reference 4); an airflow directing device applying an airflow to the media including first directional components away from the printzone and second directional components sufficiently toward the media to bear the media against a support apparatus of the printzone and thereby stabilize the media thereat (figures 1-3, reference 16, 22, 24, 26; column 1, lines 56-57; since as seen in figure 2, airflow is directed in a downward direction, there is inherently a downward airflow direction. Where there is a downward airflow component, there is inherently stabilization of the media.)
- {claim 41} the airflow directing device is an air knife having an elongate slot located proximate the media and proximate the printzone whereby the second directional components maintain the media against the support surface when in the printzone (figure 1, reference 26)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6-7, 20-21, 29-30, and 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith (US Pat 5020244) in view of Martinengo (US Pat 5495275).

Art Unit: 2853

Smith discloses:

- {claim 6} A method (as applied to claim 5)
- {claim 7} electronic control circuit components serving also to support operation of an inkjet printer (column 5, lines 36-63)
- {claim 20} an ink assist air knife (as applied to claim 20)
- {claim 21} control components serving also to support operation of the inkjet printing mechanism (column 5, lines 36-63)
- {claim 29} an inkjet printing mechanism (as applied to claim 22)
- {claim 30} electronic control components directing operation of the inkjet printing mechanism (column 5, lines 36-63)
- {claim 32} an ink assist air knife (as applied to claim 31)
- {claim 33} the resistive elements include electronic control component means for supporting operation of an inkjet printing mechanism means for producing the print imaging (column 5, lines 36-63)

Smith differs from the claimed invention in that it does not disclose:

- {claim 6} the heat source includes resistive elements carrying electrical current therethrough and having resistance thereto sufficient to produce elevated temperature in the airflow as the heat energy carried by the airflow moving therepast
- {claim 20} the heat source comprises electrically conductive elements offering resistance to electrical current passing therethrough
- {claim 29} the heat source comprises electric components offering resistance to electrical current passing therethrough
- {claim 32} the heat energy supplying means comprises electric component means for offering resistance to electrical current passing therethrough

Martinengo discloses:

- {claim 6} the heat source includes resistive elements carrying electrical current therethrough and having resistance thereto sufficient to produce elevated

temperature in the airflow as the heat energy carried by the airflow moving therepast (column 6, lines 24-27)

- {claim 20} the heat source comprises electrically conductive elements offering resistance to electrical current passing therethrough (column 6, lines 24-27)
- {claim 29} the heat source comprises electric components offering resistance to electrical current passing therethrough (column 6, lines 24-27)
- {claim 32} the heat energy supplying means comprises electric component means for offering resistance to electrical current passing therethrough (column 6, lines 24-27)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Martinengo into the invention of Smith. The motivation for the skilled artisan in doing so is to gain the benefit applying voltage to the heating element so that temperature can be raised and heating can be properly performed (column 6, lines 24-27).

Response to Arguments

6. Applicant's arguments filed 09/22/03 have been fully considered but they are not persuasive.

The applicant argues that Smith only teaches an airflow directional component that is parallel to or across the surface, and thus “nowhere does Smith show any significant airflow directional component onto or toward the media surface, and certainly none stabilizing media by virtue of an orientation or direction.” The applicant argues, “there being no substantial directional component toward or ‘onto’ the media surface.” However, the examiner draws the applicant’s attention to Smith column 1, lines 56-57 where it is clearly disclosed “This baffle directs the heated air **onto** the media at high velocity.” The examiner thought that figure 1 adequately demonstrated this principle. However, if the applicant would like more proof that Smith discloses an airflow directed onto the media, the examiner draws the applicant’s attention to figure 2 where air is directed toward the media in a downwards diagonal direction. One of ordinary skill in the art, as well as any student of physics knows that a downward directional

Art Unit: 2853

component breaks into downward and horizontal components. Since there is a downwards air flow component disclosed (at high velocities nonetheless), it is inherent that the air flow stabilizes the media even if Smith does not explicitly disclose as such. Furthermore, the examiner draws the applicant's attention to figure 10 of the specification where the applicant discloses an airflow that is blown in the downward diagonal direction (with the downward and horizontal components highlighted). The applicant will appreciate that this direction of airflow is nearly identical to the airflow disclosed in Smith figure 2. In light of all these responses, the applicant's arguments are not deemed to be persuasive.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

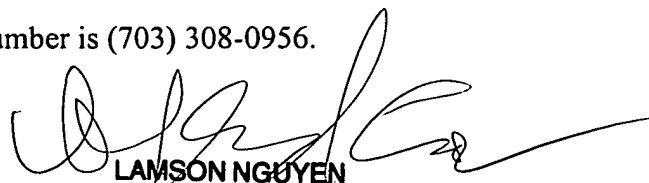
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard S Liang whose telephone number is (703) 305-4754. The examiner can normally be reached on 8:30-5 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (703) 308-4896. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

ls! LSL



LAMSON NGUYEN
PRIMARY EXAMINER